Whiteshill Primary School

Maths Long Term Plan

Year 4

| Unit Focus | Lesson Objective | Subject Knowledge and Teaching Notes |
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| Number and place value | Read 4-digit numbers in words and write using numerals | Make sure you include some examples that have zero as a place holder in one column |
| | Read 4-digit numbers in numerals and write in words | |
| | Represent 4-digit numbers | |
| | Recognise the value of digits in 4-digit numbers | |
| | Partition 4-digit numbers in different ways | |
| | Identify 4-digit numbers on a number line | |
| | Represent 4-digit numbers on a number line | |
| | Estimate 4-digit numbers on a number line | |
| | Count backwards through zero to include negative numbers | |
| | Count in multiples of 25 from zero | |
| | Find 1000 more than a given number | |
| | Find 1000 less than a given number | |
| | Count up in multiples of 1000 from any number | |
| | Compare two 4-digit numbers using < > and = (less than, greater than, equal to) | |
| | Order 4-digit numbers with different thousands | |
| | Order 4-digit numbers with the same thousands | |

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| | Order any 4-digit number | |
| | Round 2-digit number to the nearest 10 | Make sure you include answers that round to the nearest 100 e.g. 403 rounds down to 400 and 497 rounds up to 500. |
| | Round 3-digit number to the nearest 10 | |
| | Round 4-digit number to the nearest 10 | |
| | Round 3-digit number to the nearest 100 | Make sure you include answers that round to the nearest 1000 e.g. 4003 rounds down to 4000 and 4997 rounds up to 5000. |
| | Round 4 digit numbers to the nearest 100 | |
| | Round 4-digit number to the nearest 1000 | |
| | Read Roman numerals to 100 | |
| Multiplication and Division: Multiplication Tables | Know and use the effect of multiplying by 0 | |
| | Know and use the effect of multiplying by 1 | |
| | Know and use the effect of dividing by 1 | |
| | Demonstrate the 6 x table using concrete and pictorial representations. | e.g. hundred square, then number line, then arrays |
| | Count in steps of 6 from zero | |
| | Demonstrate the 9 x table using concrete and pictorial representations. | |
| | Count in steps of 9 from zero | |
| | Demonstrate the 7 x table using concrete and pictorial representations. | |
| | Count in steps of 7 from zero | |
| | Demonstrate the 11 x table using concrete and pictorial representations. | |
| | Count in steps of 11 from zero | |
| | Demonstrate the 12 x table using concrete and pictorial representations. | |

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| | Count in steps of 12 from zero | |
| | Use knowledge of factor pairs (commutativity) when multiplying mentally three numbers together. | e.g. 2 x 6 x 5 = 10 x 6 = 60 or 6 x 5 = 30 x 2 = 60 |
| Addition: mental and written methods | Add ones to 4-digit numbers (where the thousands change). | e.g. 4994 + 8 = 5002 |
| | Add tens to 4-digit numbers (where the hundreds don't change). | e.g. 5432 + 60 = 5492 |
| | Add tens to 4-digit numbers (where the hundreds do change) | e.g. 5432 + 90 = 5522<br>5432 + 70 = 5502<br>5502 + 20 = 5522 |
| | Add tens to 4-digit numbers (where the thousands change) | See above examples – it is the same strategy |
| | Add hundreds to 4-digit numbers (where the thousands don't change) | |
| | Add hundreds to 4-digit numbers (where the thousands change) | |
| | Add 3-digit number to 4-digit number using rounding to the nearest hundred and then adjusting | 3624 + 199 =<br>3624 + 200 = 3824<br>3824 – 1 = 3823<br>Explain that this should only be used when adding 3 digit numbers that are close to the multiple of 100 e.g. 297 is close to 300 or 303 is close to 300. Make sure your examples match this – it is not a useful strategy for other numbers. |
| | Add two 4-digit numbers using rounding to the nearest thousand and then adjusting | Same but with numbers that are close to multiples of 1000 e.g. adding 1998 or 3002 |
| | Add two 3-digit numbers where the sum exceeds 1000, choosing an efficient mental strategy | Choose the most appropriate of the strategies that has been taught above.<br>The focus is not on the answers – it is on which strategy they chose and why. |
| | Estimate the answer to an addition calculation | Use rounding to round both 4 digit numbers to the nearest 1000 and then add them mentally using knowledge of multiples of 10. |

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| | Add two 4-digit numbers by partitioning and recombining (no carrying) | This is not column method – they need to understand the concept behind column addition before they move on to it. |
| | Use column addition for two 4-digit numbers when carrying is required from the ones column | |
| | Use column addition for two 4-digit numbers when carrying is required from the tens column | |
| | Use column addition for two 4-digit numbers when carrying is required from the hundreds column | |
| | Use column addition for two 4-digit numbers when carrying is required from multiple columns | |
| | Use column addition for two 3-digit numbers where the sum exceeds 1000 | |
| | Use column addition for 4-digit and 3-digit numbers when carrying is required in multiple columns | |
| | Use column addition for 4-digit and 2-digit numbers when carrying is required in multiple columns | |
| | Choose efficient methods to add numbers with up to 4-digits | They need to draw on both mental and written methods – you need to give them questions which allow them to choose between round and adjust, partitioning to bridge the ten and column addition for everything else! |
| Subtraction: mental and written methods | Subtract ones from 4-digit number (where the hundreds change) choosing an efficient mental strategy. | e.g. 4502 – 6 =<br>what can I see and what do I know? e.g. for this one I know that 2 and 4 make 6 so I will take off the 2 then another 4. |
| | Subtract ones from 4-digit number (where the thousands change) choosing an efficient mental strategy. | 4004 – 6 =<br>what can I see and what do I know? e.g. for this one I know that 2 and 4 make 6 so I will take off the 4 then another 2. |
| | Subtract tens from 4-digit number (where the hundreds change) choosing an efficient mental strategy. | 4356 – 60 =<br>4267 – 90 = |

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| | | What can I see and what do I know? for these you might see that 56 is 4 away from 60 so take away 56 then takeaway another 4. But for the second one you might see that 90 is close to 100 so you would takeaway 100 and adjust by adding 10. Each question may require a different strategy but it is all about using number facts (number bonds, doubles and halves, near doubles and halves, being close to a multiple of 10,100,1000) that they have to hand. |
| | Subtract tens from 4-digit number (where the thousands do change) choosing an efficient mental strategy | 5025 – 50 =<br>What do I know and what do I see? For this one you might spot that 25 is half of 50 so you will take away 25 twice. |
| | Subtract hundreds from 4-digit number (where the thousands don't change) choosing an efficient mental strategy | 4567 – 300 = |
| | Subtract hundreds from 4-digit number (where the thousands change) choosing an efficient mental strategy | 4023 – 300 =<br>What do I know and what do I see? I know that I can do 4000 – 300 is 3700 and then adjust by putting the 23 back on. |
| | Subtract 3-digit number from 4-digit number using rounding to the nearest hundred and then adjusting. | 4567 – 299 =<br>They takeaway 300 then adjust by adding 1. This only works with numbers that are very close to the multiples of 100. |
| | Subtract two 4-digit numbers using rounding to the nearest thousand and then adjusting | 4567 – 2999 =<br>They takeaway 3000 then adjust by adding 1. This only works with numbers that are very close to the multiples of 1000. |
| | Subtract by finding the difference between two 4 digit numbers by counting on | The two numbers need to be close to each other to make this a worthwhile strategy e.g. 4237 – 4231 = |
| | Estimate the answer to a subtraction calculation | |
| | Subtract two 4-digit numbers using partitioning no exchanging | This is the concept behind column subtraction – they need to understand this before they can use column subtraction. |

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| | Use column subtraction for 4-digit numbers when exchanging is required in the ten's column | |
| | Use column subtraction for 4-digit numbers when exchanging is required in the hundred's column | |
| | Use column subtraction for 4-digit numbers when exchanging is required in the thousand's column | |
| | Use column subtraction for 4-digit numbers when exchanging is required in more than one column | |
| | Use column subtraction for 4-digit and 3-digit numbers when exchanging is required in more than one column | |
| | Use column subtraction for 4-digit and 2-digit numbers when exchanging is required in more than one column | |
| | Choose efficient methods to subtract | A mixture of both mental and written subtraction – they need to look at a pair of numbers and know when it is best to use a mental strategy and when they should use column subtraction. |
| Multiplication and division | Multiply 2 digit numbers by 10 using place value | X 10 makes it ten times bigger – place value columns |
| | Multiply 1 digit numbers by multiples of 10 using place value | 6 x 20 = 6 x 2 = 12 x 10 = 120<br>This is using known number facts again |
| | Use the distributive law to multiply a two-digit number by 6, 7 or 9. | e.g. 22 x 6 is the same as (20 x 6) + (2 x 6) |
| | Multiply 2 digit number by 6, 7 or 9 using a formal written method | |
| | Multiply 3-digit number by a 1 digit number using a formal written method where the ones column goes over 10. | You can use any times table for this, not just 6, 7 and 9. |
| | Multiply 3-digit number by a 1 digit number using a formal written method where the tens column goes over 100. | The number will always need to have a low number in the ones and hundreds column to ensure it is only the tens which goes over 100 – choose your numbers wisely! |
| | Multiply 3-digit number by a 1 digit number using a formal written method where the hundreds column goes over 1000. | Choose your numbers wisely again! |
| | Multiply 3-digit number by a 1 digit number using a formal written method where more than one column changes. | This can be any number to encourage lots of column changes. |

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| | Divide near multiples by 6, 7, 9, 11, 12 with remainders | e.g. 37 divided by 6 so they need to recognise that 36 is a multiple of 6 – they have to use their multiples for this and then count on to find the remainder. |
| | Use times table facts and place value when dividing mentally | e.g. 120 ÷ 6, 1200÷ 6, 1320 ÷ 12 |
| | Use partitioning to divide by 6, 7 and 9 where the quotient (answer) is a teens number | e.g. 84 divided by 7 = 12<br>they need to spot the times tables they know e.g. 7 x 10 = 70 and 7 x 2 = 14 |
| | Divide 3-digit number by a single digit number using partitioning and place value | 351 divided by 3 is the same as<br>300 divided by 3<br>30 divided by 3<br>21 divided by 3<br>You need to choose carefully so that there are no remainders |
| | Use written method to divide a 3-digit number by a single digit number (hundreds = multiple of divisor, tens > divisor) with no remainder | e.g. 342 divided by 3 or 666 divided by 3 – choose your numbers carefully! |
| | Use written method to divide a 3-digit number by a single digit number (hundreds > divisor, one exchange) with no remainder | e.g. 423 divided by 3 – choose your numbers carefully! |
| | Use written method to divide a 3-digit number by a single digit number (hundreds > divisor, two exchanges) with no remainder | e.g. 463 divided by 3 – choose your numbers carefully! |
| | Use written method to divide a 3-digit number by a single digit number (hundreds < divisor) with no remainder | e.g. 126 divided by 3 – choose your numbers carefully! |
| | Use multiplication or division to solve correspondence problems | e.g. if I need 30 red marbles and there are 3 red and 1 blue marbles in each bag, how many bags do I need? You know how many marbles you need, and you know how many are in each bag, so you use division to work out the answer. |
| | Use multiplication or division to solve scaling problems | e.g. for every 25 bananas there are 3 apples? Or there are 12 times as many girls as boys in the class – how many girls are there if there are 4 boys. |
| Decimals | Recognise that hundredths arise from dividing a number (or object) into one hundred equal parts and dividing tenths by ten. | If I split this object in to ten, then each one of those in to ten, there are 100 equal parts. |

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| | | Express as a fraction and decimal e.g. If I choose 40 of these equal pieces, it is 40 out of 100 or 40/100 or 0.40 out of 1.00<br><br>Use the place value counters |
| | Read and represent a number with 2 decimal places | Using decimal place value counters e.g. 0.42 = no one counters, 4 tenth counters and 2 hundredth counters. |
| | Count up in hundredths | e.g. 0.69, 0.70 – seeing that this is 69 hundredths and 70 hundredths – important that you say zero point six nine, not zero point sixty-nine |
| | Count down in hundredths | e.g. 0.80, 0.79– seeing that this is 80 hundredths and 79 hundredths – important that you say zero point six nine, not zero point sixty-nine |
| | Divide a one-digit number by 10 | |
| | Divide a one-digit number by 100 | |
| | Divide a two-digit number by 10 | |
| | Divide a two-digit number by 100 | |
| | Compare numbers with 1 dp | |
| | Compare numbers with 2 dp | |
| | Round numbers with 1dp to nearest whole number | |
| | Convert from pounds to pence | |
| | Convert from pence to pounds | |
| | Use mental strategies to add numbers with 1 dp | Children to think about their number facts and choose the most efficient method. |
| | Use mental strategies to add numbers with 2 dp | Children to think about their number facts and choose the most efficient method. |
| | Use column addition for numbers with 2 decimal places when carrying is required | |

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| | Use mental strategies to subtract numbers with 1 dp | Children to think about their number facts and choose the most efficient method. |
| | Use mental strategies to subtract numbers with 2 dp | Children to think about their number facts and choose the most efficient method. |
| | Use column subtraction for numbers with 2 decimal places with exchanging required | |
| Fractions | Add fractions with the same denominator within and beyond one whole | |
| | Subtract fractions with the same denominator within and beyond one whole | |
| | Calculate a unit fraction of an amount when the answer is a whole number | Unit fraction is a fraction with 1 as the numerator |
| | Calculate a non-unit fraction of an amount when the answer is a whole number | Non-unit fraction is a fraction with a number other than 1 as the numerator but not an improper fraction e.g. 3/7 |
| | Identify equivalent fractions from diagrams | |
| | Find families of equivalent fractions | e.g. a set of fractions that are equivalent to ½ |
| | Know and use the decimal equivalents to 1/4, 1/2, 3/4 | |
| Geometry: properties of shape - Angles | Identify acute angles | |
| | Identify obtuse angles | |
| | Identify acute angles in shapes | |
| | Identify obtuse angles in shapes | |
| | Identify right angles in shapes | |
| | Compare angles up to two right angles in size | |
| | Order angles up to two right angles in size | |
| Geometry: Properties of Shape | Identify and describe an equilateral triangle | |
| | Identify and describe an isosceles triangle | |
| | Identify and describe a scalene triangle | |

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| | Identify and describe a parallelogram | |
| | Identify and describe rhombus | |
| | Identify and describe a trapezium | |
| | Identify and describe a kite | |
| | Classify 2-D shapes | Including all the shapes you have introduced above plus the basic 2D shapes learnt in previous years e.g. square, oblong – you might also apply their angle knowledge during this lesson e.g. which shapes have got obtuse angles? |
| | Identify lines of symmetry of a 2D shape | Looking for lines of symmetry using regular and irregular shapes – need to understand that regular shapes have the same number of lines of symmetry as they have vertices e.g. a hexagon has 6 lines of symmetry. |
| | Identify a line of symmetry of a pattern and for a diagram of a reflection | e.g. coloured beads in a row or Rangoli patterns or pixelated pictures. |
| | Use a line of symmetry to produce a symmetrical pattern | |
| | Use a line of symmetry to complete a symmetrical shape | |
| Geometry: Position and direction | Use coordinates to describe the position of a point in the first quadrant | e.g. this point is at (8,5) |
| | Plot points in the first quadrant using co-ordinates | e.g. read a co-ordinate (8,5) and plot it on a grid. |
| | Use coordinates to plot a set of points to construct a polygon | Revise the shapes they were taught above and get them to name them to apply their previous knowledge – a polygon is any 2D shape with straight sides. |
| | Describe movements between positions as translations of a given unit to the left/right | Start with just moving one point on a grid, then move on to moving a whole polygon on a grid by moving all the points of the polygon – again, name the shapes to apply their previous knowledge. |
| | Describe movements between positions as translations of a given unit to the up/down | |

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| | Describe movements between positions as translations of a given unit to the left/right and up/down | 2 steps e.g. move all the points 4 left, 2 up – again use shapes that they have learnt previously to help them apply their knowledge. |
| Measurement: Converting units | Convert between kilometres and metres | |
| | Convert between centimetres and millimetres | |
| | Convert between kilograms and grams | |
| | Convert between litres and millilitres | |
| Measurement: Area and perimeter | Measure and calculate the perimeter of 2D shapes when dimensions are unknown | This means they need to measure it first with a ruler – you could apply conversion between mm and cm here so they get more practise of this. Once they have measured all the sides, they add them together. Keep it to the 3 or 4 sided shapes they learnt earlier in the term – again, they can name the shapes to apply their knowledge of shape. Also introduce the idea that if it is a regular shape you only need to measure one side and then multiply. |
| | Calculate the perimeter of rectangles (including squares) when dimensions are known | Don't label all of the measurements e.g. on a square just label one side as 4cm – they need to know that the rest are 4 because it is a regular shape. On a rectangle, just label 4cm and 2cm on two of the sides – they need to realise because of their knowledge of rectangles, that opposite sides are the same. |
| | Calculate the perimeter of other rectilinear shapes when dimensions are known | Rectilinear means any shape whose sides all meet at right angles. |
| | Find the area of rectangles (including squares) by counting squares | |
| | Find the area of other rectilinear shapes by counting squares | |
| Measurement: Time | Read the time from a clock face (analogue) to the nearest minute and write it as a digital am time. | e.g. 7.23 |
| | Read the time from a clock face (analogue) to the nearest minute and write it as a digital pm time. | e.g. 17.54 |
| | Read the time from a digital clock and write it as analogue am time. | e.g. 8.54 would be written as 6 minutes to 9am. |

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| | | Or |
| | Read the time from a digital clock and write it as analogue pm time. | e.g. 17.39 would be written as 39 minutes past 5pm. |
| | Converting from minutes to seconds and hours to minutes. | |
| | Converting from weeks to days and years to months | |
| Statistics | Solve comparison, sum and difference problems for a pictogram where the symbol represents multiple items | |
| | Present data on a bar chart with an appropriate scale on the frequency axis | Discuss the fact you can use different scales depending on the size of the data range – choose the scale that best suits their data. |
| | Solve comparison, sum and difference problems on a bar chart with different scales on the frequency axis | |
| | Present data on a time graph | |
| | Interpret data on a time graph. | |
| | solve comparison, sum and difference problems in tables | e.g. population of different countries, heights of mountains, temperatures in different towns in a table. You could have more than one column e.g. the population over a number of years, or the temperature on different days of the week. |
| | solve comparison, sum and difference problems on time graphs | |